

Claims

- [c1] What is claimed is:
1. An optical disc system for recording data to an optical disc rotating at a constant angular velocity, the optical disc system comprising:
 - a spindle motor for rotating the optical disc at a constant angular velocity (CAV);
 - an optical pickup unit for accessing data on the optical disc and producing a wobble signal;
 - a phase-locked loop (PLL) for extracting a wobble signal carrier frequency from the wobble signal output by the optical pickup unit;
 - a clock synthesizer electrically connected to the PLL for producing a channel clock conforming to the CAV according to the carrier frequency output by the PLL and the operating speed of the spindle motor;
 - a data encoder for being used in accordance with the channel clock output by the clock synthesizer to encode incoming data and produce a corresponding data signal; and
 - an optical pickup unit driver circuit connected to the optical pickup unit for controlling the optical pickup unit according to a write strategy of the optical disc system and the data signal output by the data encoder.
 - [c2] 2. The optical disc system of claim 1 further comprising a pre-amplifier electrically connected to the PLL and the optical pickup unit for amplifying the wobble signal output by the optical pickup unit.
 - [c3] 3. The optical disc system of claim 1 further comprising:
 - a frequency generator connected to the spindle motor for producing a first signal according to a rotation speed of the spindle motor;
 - a crystal oscillator for producing a fixed clock;
 - a frequency divider connected to the crystal oscillator for dividing the frequency of the inputted fixed clock to produce a second signal;
 - a frequency comparator connected to the frequency generator and the frequency divider for comparing the first signal and the second signal so as to produce a control signal; and
 - a motor driver circuit for driving the spindle motor to rotate the optical disc according to the control signal.

- [c4] 4.The optical disc system of claim 1 being an optical disc recorder.
- [c5] 5.The optical disc system of claim 1 wherein the optical pickup unit is a laser pickup.
- [c6] 6.A method of using an optical disc system for recording data to an optical disc rotating at a constant angular velocity comprising:
providing a spindle motor for rotating the optical disc at a constant angular velocity (CAV);
providing an optical pickup unit for accessing data on the optical disc and producing a wobble signal;
providing a phase-locked loop (PLL) for extracting a wobble signal carrier frequency from the wobble signal output by the optical pickup unit;
providing a clock synthesizer electrically connected to the PLL for producing a channel clock conforming to the CAV according to the carrier frequency output by the PLL and the operating speed of the spindle motor;
providing a data encoder for being used in accordance with the channel clock output by the clock synthesizer to encode incoming data and produce a corresponding data signal; and
providing an optical pickup unit driver circuit connected to the optical pickup unit for controlling the optical pickup unit according to a write strategy of the optical disc system and the data signal output by the data encoder.
- [c7] 7.The method of claim 6 further comprising a pre-amplifier electrically connected to the PLL and the optical pickup unit for amplifying the wobble signal output by the optical pickup unit.
- [c8] 8.The method of claim 6 further comprising:
providing a frequency generator connected to the spindle motor for producing a first signal according to a rotation speed of the spindle motor;
providing a crystal oscillator for producing a fixed clock;
providing a frequency divider connected to the crystal oscillator for dividing the frequency of the inputted fixed clock to produce a second signal;
providing a frequency comparator connected to the frequency generator and the frequency divider for comparing the first signal and the second signal so as to

produce a control signal; and
providing a motor driver circuit for driving the spindle motor to rotate the
optical disc according to the control signal.

[c9] 9.The method of claim 6 wherein the optical disc system is an optical disc
recorder.

[c10] 10.The method of claim 6 wherein the optical pickup unit is a laser pickup.